

REMARKS

Foreign Priority

The acknowledgement, in the Office Action, of a claim for foreign priority under 35 U.S.C. § 119(a)-(d), and that the certified copy of the priority document has been received, is noted with appreciation.

Status Of Application

Claims 1-30 are pending in the application; the status of the claims is as follows:

Claims 1-30 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,748,277 to Huang et al ("Huang").

To date, no Notice of Draftsperson's Patent Drawing Review has been received. Applicants respectfully request receipt of this document when it becomes available. Please note that the original drawings filed in the patent application are "formal" drawings.

No claims have been amended herein.

35 U.S.C. § 102(b) Rejection

The rejection of claims 1-30 under 35 U.S.C. § 102(b) as allegedly being anticipated by Huang, is respectfully traversed based on the following.

Claim 1 recites:

A method for driving a liquid crystal display by applying AC pulses to a liquid crystal layer through a plurality of scan electrodes and a plurality of data electrodes which face and cross each other, in which the scan electrodes are selected for scanning successively at specified time intervals, said method comprising:

a reset step of applying a reset pulse, which is to reset liquid crystal

of the liquid crystal layer to a predetermined state, to an area of the liquid crystal layer that corresponds to a selected one of the scan electrodes; and
a selection step of applying a selection pulse, which is to select a final state of the liquid crystal, to the area of the liquid crystal after the reset step;

wherein:

a pulse applied to the selected one of the scan electrodes during the reset step has an amplitude which is larger than a maximum amplitude of pulses applied to each of the data electrodes and has a polarity maintaining period which is longer than that of the selection pulse, so that the reset pulse has an alternating cycle which is longer than that of the selection pulse.

That is, according to claim 1, and by way of example with reference to the attached annotated version of Fig. 4, which has been marked up for the Examiner's convenience, the pulse applied during the reset step (A or RESET) has a polarity maintaining period (B) which is **longer** than the polarity maintaining period (C) of the selection pulse (D). Please refer to lines 1 to 5 of paragraph [0062] on page 18 of the specification of the present application. Further, according to claim 1, and by way of example with reference to the marked up version of Fig. 4 attached, the pulse applied to the selected one of the scan electrodes (ROW1, ROW2, ROW3) during the reset step (A or RESET) has an amplitude (V1) which is larger than a maximum amplitude (V4) of pulses applied to each of the data electrodes (COLUMN) as described in lines 1 to 9 of paragraph [0065] on page 19 of the specification of the present application.

In contrast, as illustrated throughout Figs. 5 and 6 of Huang, the polarity maintaining period of the reset step (PERIOD 1) is **shorter** than the polarity maintaining period of the selection pulse (PERIOD 2). That is, the polarity maintaining period of the reset step (PERIOD 1) is 0.5ms, and the polarity maintaining period of the selection pulse (PERIOD 2) is 1ms.

Thus, claim 1 is not anticipated by Huang. Claim 2-8 depend from non-anticipated independent claim 1 and are thus also not anticipated by Huang.

Claim 9 recites:

A method for driving a liquid crystal display by applying AC pulses to a liquid crystal layer through a plurality of scan electrodes and a plurality of data electrodes which face and cross each other, in which the scan electrodes are selected for scanning successively at specified time intervals, said method comprising:

a selection step of applying a selection pulse, which is to select a final state of the liquid crystal, to an area of the liquid crystal layer that corresponds to a selected one of the scan electrodes; and

an evolution step of applying an evolution pulse, which is to cause the liquid crystal to evolve to the selected final state, to the area of the liquid crystal layer;

wherein a pulse applied to the selected one of the scan electrodes during the evolution step has an amplitude which is larger than a maximum amplitude of pulses applied to each of the data electrodes and has a polarity maintaining period which is longer than that of the selection pulse, so that the evolution pulse has an alternating cycle which is longer than that of the selection pulse.

That is, according to claim 9, and by way of example with reference to the marked up version of Fig. 4 attached, the pulse applied during the evolution step (E or EVOLUTION) has a polarity maintaining period (F) which is **longer** than the polarity maintaining period (C) of the selection pulse (D). Please refer to lines 1 to 5 of paragraph [0062] on page 18 of the specification of the present application. Further, according to claim 9, the pulse applied to the selected one of the scan electrodes (ROW1, ROW2, ROW3) during the evolution step (E or EVOLUTION) has an amplitude (V3) which is larger than a maximum amplitude (V4) of pulses applied to each of the data electrodes (COLUMN) as described in lines 1 to 9 of paragraph [0065] on page 19 of the specification of the present application.

In contrast, as illustrated throughout Figs. 5 and 6 of Huang, the polarity maintaining period of the reset step (PERIOD 3) is **shorter** than the polarity maintaining period of the selection pulse (PERIOD 2). That is, the polarity maintaining period of the evolution step (PERIOD 3) is 00.5ms, and the polarity maintaining period of the selection pulse (PERIOD 2) is 1ms.

same
as
①

Thus, claim 9 is not anticipated by Huang. Claim 10-15 depend from non-anticipated independent claim 9, and are thus also not anticipated by Huang.

Claim 16 recites:

A liquid crystal display device comprising:
a liquid crystal display comprising:
a plurality of scan electrodes;
a plurality of data electrodes crossed over the scan electrodes; and
a liquid crystal layer sandwiched between the scan electrodes and the data electrodes, said liquid crystal layer including liquid crystal; and

a driver which is connected to the scan electrodes and to the data electrodes, the driver being adapted to scan the liquid crystal display by successively selecting the scan electrodes at specified time intervals and thereby applying AC pulses to an area of the liquid crystal layer corresponding to a selected one of the scan electrodes, the AC pulses comprising:

a reset pulse, which is to reset liquid crystal of the liquid crystal layer to a predetermined state, to the area of the liquid crystal layer during a reset step; and

a selection pulse, which is to select a final state of the liquid crystal, to the area of the liquid crystal during a selection step that is subsequent to the reset step;

wherein a pulse applied to the selected one of the scan electrodes during the reset step has an amplitude which is larger than a maximum amplitude of pulses applied to each of the data electrodes and has a polarity maintaining period which is longer than that of the selection pulse, so that the reset pulse has an alternating cycle which is longer than that of the selection pulse.

For at least the reasons presented above with respect to claim 1, claim 16, and thereby claims 17-23 which depend therefrom, are also not anticipated by Huang.

same as
①

Claim 24 recites:

A liquid crystal display device comprising:
a liquid crystal display comprising:
a plurality of scan electrodes;

a plurality of data electrodes crossed over the scan electrodes; and

a liquid crystal layer sandwiched between the scan electrodes and the data electrodes, said liquid crystal layer including liquid crystal; and

a driver which is connected to the scan electrodes and to the data electrodes, the driver being adapted to scan the liquid crystal display by successively selecting the scan electrodes at specified time intervals and thereby applying AC pulses to an area of the liquid crystal layer corresponding to a selected one of the scan electrodes, the AC pulses comprising:

a selection pulse, which is to select a final state of the liquid crystal, to the area of the liquid crystal during a selection step; and

an evolution pulse, which is to cause the liquid crystal to evolve to the selected final state, to the area of the liquid crystal layer during an evolution step that is subsequent to the selection step;

wherein a pulse applied to the selected one of the scan electrodes during the evolution step has an amplitude which is larger than a maximum amplitude of pulses applied to each of the data electrodes and has a polarity maintaining period which is longer than that of the selection pulse, so that the evolution pulse has an alternating cycle which is longer than that of the selection pulse.

For at least the reasons presented above with respect to claim 9, claim 24, and thereby claims 25-30 which depend therefrom, are also not anticipated by Huang.

Accordingly, it is respectfully requested that the rejection of claims 1-30 under 35 U.S.C. § 102(b) as allegedly being anticipated by Huang, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

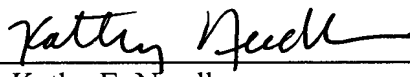
Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Application No.: 09/866,287
Response Dated August 20, 2003
Reply to Office Action of March 26, 2003

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

By: 
Kathy E. Needleman
Registration No. 47,816
Attorney for Applicants

KEN/llb:bar:jkk
SIDLEY AUSTIN BROWN & WOOD LLP
717 N. Harwood, Suite 3400
Dallas, Texas 75201
Direct: (214) 981-3474
Main: (214) 981-3300
Facsimile: (214) 981-3400
August 20, 2003

DAI 262344v5